DOCUMENT RESUME

ED 359 802 FL 021 349

AUTHOR Barnes, Mary Ellen; And Others
TITLE A Metacognitive Strategy for Teaching Essay Planning to E.S.L. Students: A Computer-Based Instructional Design.
PUB DATE [93]
NOTE 48p.; Paper presented at the Annual Meeting of the Teachers of English to Speakers of Other Language (San Francisco, CA, March 1990).
PUB TYPE Tests/Evaluation Instruments (160) -- Guides - Classroom Use - Teaching Guides (For Teacher) (052) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Classroom Techniques; Cognitive Processes; College Students; *Computer Assisted Instruction; *English (Second Language); *Essays; Higher Education; *Metacognition; Second Language Instruction; Student Evaluation; *Writing Instruction
IDENTIFIERS University of Southern California

ABSTRACT

A lesson in essay planning designed for college and graduate students of English as a Second Language is described. The intended audience is a group with varied linguistic backgrounds and levels of English proficiency. The lesson's objective is to develop metacognitive skills for planning well-organized essays. A computer program using graphics, pull-down menus, and color coding was created to direct students' planning events, and the actual writing is done with paper and pencil. This lesson is designed for use early in the writing course, before the first essay is written, to make the writing process more efficient. Criteria used for evaluating the instructional design, lesson content, and technical quality of the program are outlined. Specific instructional components incorporated into the lesson are also described. These include: gaining attention; informing the learner of the lesson objective; communicating the function and utility of the strategy; communicating the context in which the strategy will be used; confirming or teaching subordinate skills; describing and demonstrating the planning task strategy and providing varied practice with novel problems; eliciting unprompted performance; providing informative feedback; assessing performance; and enhancing retention and transfer. Student and instructor questionnaires and some screen designs are appended. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED359802

A METACOGNITIVE STRATEGY FOR TEACHING ESSAY PLANNING TO E.S.L. STUDENTS: A COMPUTER-BASED INSTRUCTIONAL DESIGN

by

Mary Ellen Barnes
Suzanne L. Medina
Josh Plaskoff
Michelle M. Robertson

FL021349

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Suzanne L. Medina
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC).

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

TABLE OF CONTENTS

I. Purpose and Approach

I.a. Who is the audience?
I.b. What is the subject matter?
I.c. What is the learning strategy?
I.d. Why is it necessary for the learners to learn this material?
I.e. What is the general approach?
I.f. How will it be delivered to the learner?
I.g. What is the context?
I.h. What special problem does it solve?
I.i. How will it be evaluated?

II. Structure and Sequence

II.a. Outline and organization of content
II.b. Learning Analysis
II.c. Flowchart

III. Instructional Components

III.a. Instructional events with screen designs

IV. Designer's Notes

V. References

VI. Appendices

1. Evaluation forms: Instructor and Student
2. Instructor feedback form
3. Instructional Events

PURPOSE AND APPROACH

I.a. Who is the audience?

This lesson has been specifically designed for undergraduate and graduate university students enrolled in English as a Second Language (ESL) courses at the American Language Institute (ALI). Apart from their ALI classes, students are enrolled in at least 6 units of regular university coursework at the University of Southern California. Students share a common socioeconomic status as they are all upper middle class in their native countries. While student ages range from 20 to 45 and their linguistic backgrounds vary (e.g. Indonesian, Japanese, Korean) all share a common goal--they wish to successfully complete coursework at an American university. By doing this they are guaranteed high status positions in their countries.

The level of aptitude is generally high owing to their socioeconomic status and the educational systems from which they come. That is, students who attain university status are those who have been subjected to and survived the rigors of a highly competitive and stringent educational system. Furthermore, the motivational levels of these students is extremely high since an American education is highly valued in their countries and there is often great pressure from their families to successfully complete their studies in the United States.

Apart from linguistic differences, the most significant individual differences can be found in the area of English proficiency. While some students comfortably and efficiently function in the four basic skills of speaking, listening, reading and writing, others are particularly weak in one or more of these areas. Overall, however, most foreign students' level of reading comprehension is quite elevated.

Given their advanced levels of English proficiency we can assume the following:

1. They obtained high scores on the ALI oral Interview Examination, and on the Written Diagnostic portion of this exam.

2. They read at least at the 12th grade level.

3. Their listening comprehension skills are adequate to understand university lectures.

4. Students comprehend all vocabulary contained in this and previous lessons.

5. Students are able to classify each of the three parts of the essay: the introduction, body and conclusion.

6. Students are able to classify the subdivisions belonging to each of the previously-mentioned parts of the essay: for the introduction, students must be able to classify the background, topic sentence, and transition; for the body, students must be able to classify the subtopic sentence and details; and for the conclusion, students must be able to classify the repeated topic sentence and the repeated transition.

I.b. What is the subject matter?

In this particular lesson, attention will be given to the knowledge domain of ESL. Within this domain there are four subdivisions: speaking, listening, reading and writing. Focus will be placed upon the last-mentioned area---writing, more specifically the ESL essay.

ESL is the knowledge domain from which the subject matter for this lesson originates. Although there are many and diverse subdivisions within this domain, focus in this lesson will be placed upon the written ESL essay. Given this, students will be required to learn the following three major divisions of the essay as well as their corresponding subdivisions:

1. Introduction

    A. Background
    B. Topic Sentence
    C. Transition

2. Body

A. Subtopics
B. Details

3. Conclusion

A. Repeated Topic Sentence
B. Repeated Transition

In short, these represent the major divisions of a well-organized essay. Stated differently, these represent the features or characteristics of a well-structured essay.

I.c. What is the learning strategy?

Although the focus of this lesson is within the domain of ESL, the specific objective of this particular lesson is to develop metacognitive skills which will assist students in the production of well organized essays. For this lesson we have chosen the learning strategy of planning. Learning strategies are collections of mental tactics employed by individuals in a particular learning situation to facilitate acquisition of knowledge or skill (Derry and Murphy, 1986). Planning is the learning strategy in which the learner must organize a task approach sequence or performance routine (Corno and Mandinach, 1983). Thus, it our intention to produce an instructional unit which develops the metacognitive skill of planning within the domain of ESL instruction. Students will acquire the skills necessary to plan a well-organized essay.

I.d. Why is it necessary for the learners to learn this material?

The importance of these learning strategies can best be understood in the context of the academic environment in which the student finds him/herself. As we said previously all students share the common goal of successfully completing their studies in the United States. It is virtually impossible to accomplish this goal without being able to produce well-written coherent and particularly well-organized essays, reports, exams, theses, and dissertations, all of which are integral

parts of the degrees being pursued. Yet, in order to produce these, it is fundamental and necessary to plan. Planning in general, whether it be an essay, building, or meeting, is essential if one is to produce a successful outcome of any kind. In short, if the learner is to successfully complete his/her studies, s/he must produce well-organized essays, and these require advance planning. Planning then, is the key to academic writing success.

I.e. What is the general approach?

The general approach to this lesson is the Gagne,Briggs, & Wager (1988) model of instruction, specifically the model for teaching cognitive strategies. This macro level (nine instructional events) model has been expanded to an eleven-event-micro-level model of instruction which is more suitable for the teaching of cognitive strategies, such as this lesson in essay planning. This expanded model is the Gagne, Merrill & O'Neil (1989) model of instruction for teaching learning strategies. The specific details of instructional events # 3, 4 & 5 are based on this model as interpreted by O'Neil, Slawson & Baker (1989).

I.f. How will it be delivered to the learner?

The instructional program will be delivered to the students via computer-aided instruction. Since the ALI contains only IBM PC computers, we chose an authoring language that conformed to this computer environment. The language chosen was Matrix Layout version 1.0 by Matrix Software. While not specifically designed for the creation of computer based training programs, the language does provide an efficient design environment that can incorporate sound, graphics, hypertext capabilities, and branching into a program. It will also compile to a free-standing program so the ALI does not need the adhering language to run the program. This keeps the cost of running the program to a minimum. A driver is provided for the EGA environment and may be copied to the program diskette and distributed without royalty fees. The program hardware requirements are:

- IBM PC,XT, and AT or compatible with 640k and preferably a hard disk
- EGA graphics card and monitor
- A mouse is optional.

The floppy drive on the computer must be a high density 1.2 Megabyte 5 1/4 inch drive. The programming approach is to provide as much flexibility for the user as possible. The option to use the mouse or the keyboard allows those familiar with the mouse to use it, while those intimidated by the mouse may still use the more familiar keyboard. In addition, an instruction line appears on the bottom of the screen to direct those using the keyboard.

The beginning of the program contains quite a few graphic frames which are generated slowly. Whenever possible, these graphics are stored and accessed from RAM to speed up their display. If the gap between hitting RETURN and the display of the next graphic frame is too long, the student may become disinterested or distracted. This may have an effect on learning.

Graphic icons are used to represent planning and no-planning situations throughout the program. This will help to reinforce the planning theme. In addition, colors are used sparingly to represent various subdivisions of the essay. This color coding will help the student focus on the task at hand. Red coloring, except in areas of warning and instructions is avoided because of its strong conceptual compatibility (Fitts & Seeger, 1953).

The program is provided with a simple graphic interface. Buttons provide the student with easy continuation through the program and pull-down menus allow the student to easily select his/her option.

While completing the template, the student has the option to the exercise. The computer also directs the student in how to have the work evaluated.

For the events 1-6, the computer is providing all the instruction. However, by the beginning of Event 6, the learner is no longer dependent upon the computer for further instruction. At this point, the computer is used for the sole purpose of presenting potential topics on which to write.

After selecting a topic in event 6, the learner writes his/her essay plan using paper and pencil. The remainder of the events are conducted this way and the computer is only directing these events.

I.g. What is the context?

Where does this lesson fit with respect to the rest of the course?

There are basically two ALI courses into which this essay planning fits: ALI 201 and ALI 202. Sections of both of these courses are offered for both undergraduate and graduate students. While ALI 201 meets five days a week for 12 hours a week, ALI 202 is held only twice a week for a total of four hours. Despite the differing competency levels of these two groups of students, the focus of these courses is upon essay writing since it is such a crucial skill for university students. These courses are in essence the students' last opportunity to improve their writing skills before leaving the ALI with the ESL assistance. Other skills such as speaking, lecture note-taking, reading etc, are integrated into the curriculum. Every two to three weeks, students are engaged in a variety of activities which force them to develop the previously mentioned skills, while at the same time acquiring a background on a particular topic (e.g. earthquake prevention, future technology). Toward the end of the two week period students must plan and compose an essay which is related to the unit topic.

This particular lesson, and the three lessons which lead up to it, were created to be used toward the beginning of the course and prior to writing the first essay. All prerequisite skills have been taught during the first 6 hours of instruction. Building upon this prior knowledge, lessons 1-3 will follow during the 7th and 8th hours. Each of these should take no longer than one half hour. Finally, during the 9th instructional hour, all students will move to the computer lab where Lesson 4 instruction will take place. Thus, all four lessons will be completed in less than three instructional hours.

Lesson 1

In this lesson the students will learn the template rule. To show that they have internalized it, students will be asked to demonstrate the rule.

The student will demonstrate mastery of this rule by generating a template in which all items are present and correctly sequenced with 80% accuracy within 5 minutes.

Lesson 2

In this lesson the student will learn the sequence in which ideas should be placed in the template. By the end of this lesson, students will be able to identify this proper sequence. To demonstrate mastery, students will be given a template and will be required to indicate the proper sequence by placing numbers along side template elements, without reference materials of any kind, within 3 minutes and with 80% accuracy.

Lesson 3

In this lesson students will learn to make their ideas conform to the definitions of template items. Therefore, by the end of this lesson, students will be able to generate such ideas. Students will show their mastery by generating original ideas when provided with a template. The ideas must, in fact, conform to the template definitions. This must be done within 10 minutes with 80% accuracy.

Lesson 4

In this lesson students will learn to apply the essay planning technique. By the end of the lesson, students will be able to adopt this technique by planning as essay using the seven steps specified in the lesson. The student will demonstrate mastery of this technique if, when given a black piece of paper and a topic, they can adopt the essay planning technique for planning an essay, with no learning aids, at 80% accuracy within 15 minutes.

The physical context

The activities contained in the first three lessons will be conducted in the classroom, while the fourth lesson will be carried out during class hours in the newly-installed computer lab at the ALI. All fifteen enrollees in the course will be accommodated in this facility with their own 2 disk drive IBM-PC.

I.h. What special problem does it solve?

Over the years, a number of essay planning approaches have been tried to facilitate the essay writing process. Traditionally, the outline was adhered to although it was abandoned in recent years due to its rigidity. Currently, one finds a variety of materials which reflect a diversity of approaches. One such approach, however, dominates ESL texts and programs: "Process Writing." Process Writing uses two general techniques to help students with the identification and clarification of ideas: 1) Students brainstorm ideas with their peers, and 2) Students write in a limited period of time so as to focus their ideas. The general structure of the essay is defined by the instructor's feedback on essays written over the course of the semester. Thus, a primarily inductive non-expository approach is used.

This approach is quite effective. However, the process is lengthy. In fact, students often do not "catch on" to essay structure until the very end of the semester. In some cases, this does not happen until the middle or the end of their second semester of instruction. This finding is not surprising given that inductive instruction is more time-consuming when compared to more deductive approaches. Yet, because ESL instruction for foreign students is so costly (i.e., dollars per unit) the time element deserves serious attention.

The instructional design presented here specifically addresses this time problem. By using a more deductive approach, students learn about essay structure during the first weeks of instruction. As a result, the remainder of the semester is more efficient by practicing and refining their skills. It should be noted that essay structure is one of the major criteria which must be met

before students are no longer required to take ALI classes. Therefore, it is expected that a greater number of students will be "released" after one semester of instruction using this deductive instructional design.

I.i. How will it be evaluated?

The computer-aided instruction will be evaluated in a number of ways. First, the design of the program will be evaluated against the design specification. Next, the design itself will be analyzed according to the adopted evaluation criteria for educational software (Office of Technology Assessment; 1987). This will involve evaluating the computer-assisted instructional package by fourteen characteristics which are: 1) instructional quality, 2) content, 3) appropriateness, 4) questioning techniques, 5) approach/motivation, 6) field test result, 7) creativity, 8) learner control, 9) learning objectives, goals and outcomes, 10) feedback, 11) technical quality, 12) clarity, 13) start-up and implementation, and 14) graphics and audio. Further elaboration of these educational software evaluation characteristics is given in the following paragraphs.

Instructional quality involves five issues: 1) the programs' usefulness in a school-based, instructional setting (i.e., in a classroom, computer laboratory, media center, or school library 2) the use of nonstandardized teaching methodologies, 3) the length of the computer program, such as, can the students complete the lesson in a class period? 4) the efficiency of the program in saving time for the student as compared to other means of presenting the topic, and 5) the efficiency of the program in saving time for the teacher as compared to other means of presenting this topic.

The content of the computer-assisted instruction will be evaluated by the following questions: 1) Is the content appropriate for the intended student population? 2) Is the content accurate and current? 3) Is the content breadth reasonable (does it focus on to few or to many different concepts or content topics within one session)? 4) Is the content free of grammar, spelling, and punctuation? 5) Is the content free of any bias or stereotyping? 6) Is the content

relevant to the subject field? 7) Is there continuity between the information presented and prerequisites skills required? 8) Does the content avoid taking a side on potentially controversial moral or social issues? and 9) Is there a need for better than standard treatment of the topic in the curriculum?

When evaluating the appropriateness of the computer-assisted instruction program, eight characteristics will be considered. They include: 1) The pedagogical approach used is superior to what is available elsewhere, 2) readability level is appropriate for the intended student population, 3) tone of address is appropriate for the intended students, 4) the means of response (e.g., single keystroke, manipulating graphics) is appropriate to the intended learning population, 5) prerequisite skills required are appropriate for the intended students, 6) time required for use by a typical student does not exceed the attention span of learner, 7) sufficient exposure and practice are provided to master skills, 8) sufficient information is presented for the intended learning to occur.

The questioning techniques for the computer instructional program may involve the following: 1) the questions asked of the students are appropriate to the content and effectively measure the student's mastery of the content, and 2) the number of trials is reasonable and appropriate (e.g., student receives the correct answer after no more than three or four trials, and after at least two trials).

There are three approach/motivation software design characteristics that will be considered. These are: the approach of the program (appropriate for the intended student population), the varied format, and active student participation in the learning process.

The sixth area of evaluation will consider the evaluator's field test results. The following will be assessed; does the student understand the on-screen presentation, can they proceed without confusion or frustration, do they enjoy using the program and retain a positive attitude about it, and do they retain the desire to use the program again.

Creativity, feedback and learner control are the next three characteristics of the computer-assisted program that will be evaluated. With regards to creativity, the question of program challenge and stimulation of creativity will be considered. For learner control and feedback, the following questions will be considered: can the learner alter the program sequence and pace, is the feedback positive, appropriate to the intended student population and non-threatening, and can incorrect responses be inadvertently rewarded.

In evaluating the learning objectives, goals and outcomes, two specific questions will be asked: 1) is the learning objectives stated and is the purpose well defined? and 2) are steps taken to make the learning generalizable to other situations?

For the evaluation of the technical quality of the computer-assisted instruction program, four major areas will be considered: 1) general questions and issues, 2) clarity, 3) start-up and implementation, and 4) graphics and audio. Under the category of general technical quality there are 12 issues and questions. These include the following; 1) Can the audio be adjusted? 2) is the audio clear and used effectively? 3) are the character sets used in text display clear, appropriate, and visually interesting? 4) are the graphics clear and can they be easily interpreted? 5) is the program "crash-proof" ? 6) can the program run consistently under all normal conditions and is it "bug-free" ? 7) are the transitions between screen display effective? 8) are special features (e.g., inverse, scrolling, split screen) used appropriately and effectively? 9) does the program require a minimal amount of typing? 10) does the student have a minimum amount of teacher supervision while using the program? 11) does the computer and its' peripherals operate in a non interfering mode? 12) is the program effective in its' use of peripheral devices?

Clarity is the second area of consideration for the technical quality of the computer-assisted instruction program and this involves eleven areas which are: 1) the procedural and instructional statements are clear, 2) the on-screen prompts clearly indicate where the user should focus attention, 3) the frame formatting is clear, uncluttered, and consistent from screen to screen, 4) the

presentation of each discrete content topic is logical, 5) the sequence of content topics and instruction is logical and in appropriate steps, 6) prompts and cues are clear and consistently and logically applied, 7) demonstrations and examples are clean and available when appropriate, 8) the interface is simple enough to be used with little or no reading of the documentation, 9) the program is clear where the user is in the program, 10) the sequence of the menu items is logical, and 11) the user-computer communication is consistent and logical.

The start-up and implementation of the computer assisted program is the third area of technical quality which will be evaluated. There are three issues that will be considered for the teacher and two issues for the student. They are the following, respectively: 1) software code modifications or unusual manipulations of discs are not required to use the program effectively, 2) the start-up time for teacher implementation is not excessive, 3) the teacher needs a minimum of computer competency to operate the program: 1) the start-up for student implementation is brief enough to permit completion of the lesson, and 2) the students only need a minimum of computer competencies to operate the program.

Graphics and audio characteristics is the last area of technical quality evaluation. Four evaluation questions will be asked: 1) Are the graphics and audio used to motivate the learners? 2) are the graphics and audio appropriate for the intended student population? 3) does the graphics, audio, and color enhance the instructional process? and 4) do the graphics help focus attention to the appropriate content and are they distracting?

A feasibility review will be conducted with one of the supervisors of the computer 'experts' at the ALI laboratory. After this review and subsequent revision, the computer-aided instruction will then be piloted by two students. Appropriate evaluative measures will be utilized, such as the criterion referenced essay plan and affective measures (how does the student like the program). Appendix 1 contains the appropriate evaluative questionnaire that the instructor and students will complete and the end of the trial test of the program. The items contained in these two

questionnaires are based upon the evaluation guidelines presented by Hannafin & Peck (1988). The authors have identified four subdivisions which merit consideration while developing a computer-based instructional program: 1) instructional adequacy, 2) cosmetic adequacy;, 3) program adequacy, 4) curriculum adequacy. the student questionnaire does not include curriculum adequacy since this is best determined by the supervisor in the enclosed supervisor questionnaire.

Formative evaluation

The program was evaluated by one student and instructor from the ALI. We found the following:

Instructional adequacy:

- The objective was stated clearly and the purpose is well defined. The lesson is consistent with the objectives and various components of the lesson are all related to the lesson objectives.

- The lesson is well-sequenced, moves smoothly from one segment to the next.

- The language used in this lesson is proper for the intended student population, and the meaning is clear.

- The number of examples are reasonable and appropriate, although some students thought the number of essay topics to be selected should be more.

- To use a computer to learn is always motivating, but it seems that this program needs more learner control. In the beginning of this lesson a menu (table of contents) should be added, so that users may choose some important topics and skip

the one they are already familiar with.

Cosmetic adequacy:

On the student's evaluation, he was satisfied with the technical appearance of the program. The color coding was liked by the student and teacher.

Program adequacy:

Both student and supervisor had no complaint on this part. The program is easy to start up, it functions well and gives responses quickly and satisfactorily.

Curriculum adequacy:

According to the instructor's opinion, this lesson can be easily employed by teachers. It can be used in other writing courses even though the thematic content may differ.

In conclusion, at this point, due to the time constraint, the computer-aided program is completed. However, the program should incorporate the comments above and another series of evaluations should be done, possibly with small groups of students and instructors.

STRUCTURE AND SEQUENCE

II.a. Outline and organization of content

The instructional strategy presented in this paper follows the Gagne (Gagne, Briggs, & Wager, 1988) model of instruction for cognitive strategies on the macro level and the Gagne, Merrill & O'Neil (1989) expanded model of instructional strategies to teach learning strategies.

The learning strategy being taught here is planning. The student is confronted with a task to perform. In this case, s/he is given a topic about which to write and essay. The learner must then

use his/her knowledge of the elements which must be present for an essay to be well organized, and adopt a planning strategy to accomplish this goal. This planning strategy is the essay plan.

Carrying out planning in this area involves following a procedure. The planning strategy can actually be accomplished by following a fixed sequence of steps. This procedure must be well known to the student, otherwise s/he will be impeded in her/his main task--thinking out a solution of the problem (writing a well organized essay).

In utilizing the Gagne, Merrill & O'Neil (1989) expanded model for events #3, #4 and #5 for teaching learning strategies the event titles have subsequently changed. That is, event #3, "stimulate recall of prior learning," is now 3.1 "communicate the function and utility of the strategy," 3.2 "communicate the context in which the strategy will be used," and 3.3 "confirm or teach subordinate skills." Event #4, "present the stimulus" is now "describe and demonstrate the task strategies," and event #5, "provide learning guidance" is now "provide practice with feedback, using a variety of novel problems requiring the strategy taught."

The domain-independent instructional strategy to teach essay planning is as follows:

1. Gaining attention

2. State the objective

3.1 Communicate that essay planning consists of using techniques and strategies to organize student ideas in an essay planning template (the function and utility of the strategy).

3.2 Communicate a description of the example systems as a whole to identify schema having the following component:

a. Present an orientation which includes demonstration of the system in full operation (the context in which the strategy will be used).

3.3 Confirm or teach subordinate skills.

4. Describe and demonstrate the planning task strategies.

These are taught in the order of typical use.

a. topic selection

b. generate template

c. check for completion of elements

d. identification of template location where idea is to be placed

e. written conformation of ideas to template item

f. repetition of steps "d" and "e" until the essay planning template is completed

g. final check to make sure all ideas are present which need to be present

5. Provide practice, using a variety of novel problems requiring the strategies taught.

6. Eliciting performance.

7. Providing informative feedback

8. Assessing performance

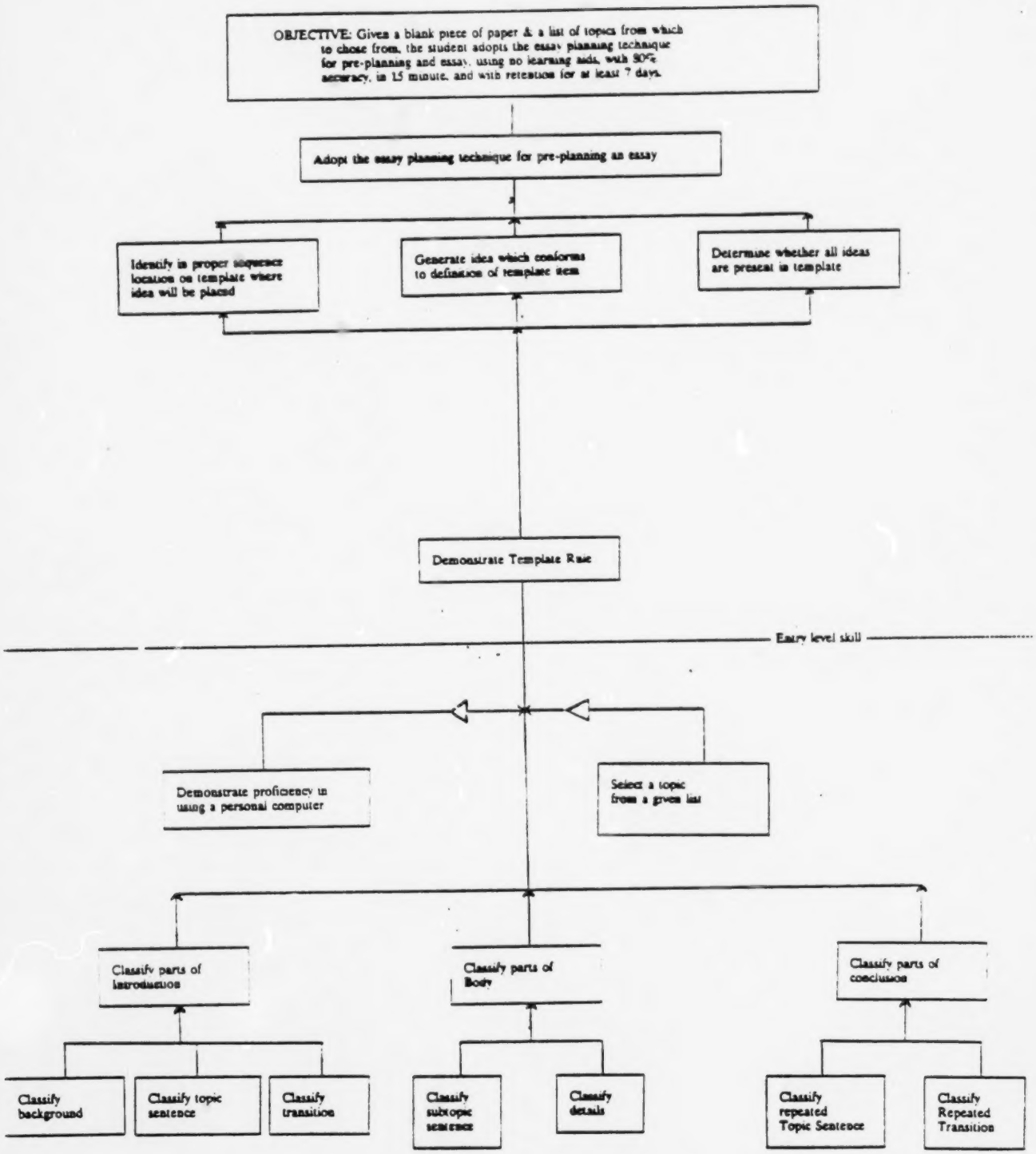
9. Enhancing retention and learning transfer

II.b. Learning Analysis

Figure 1 depicts the learning analysis for this instructional design project of a metacognitive strategy for planning an essay. There are two supporting intellectual skills which are depicted by the triangle on the learning hierarchy (Gagne, Briggs, & Wager, 1988).

II.c. Flowchart

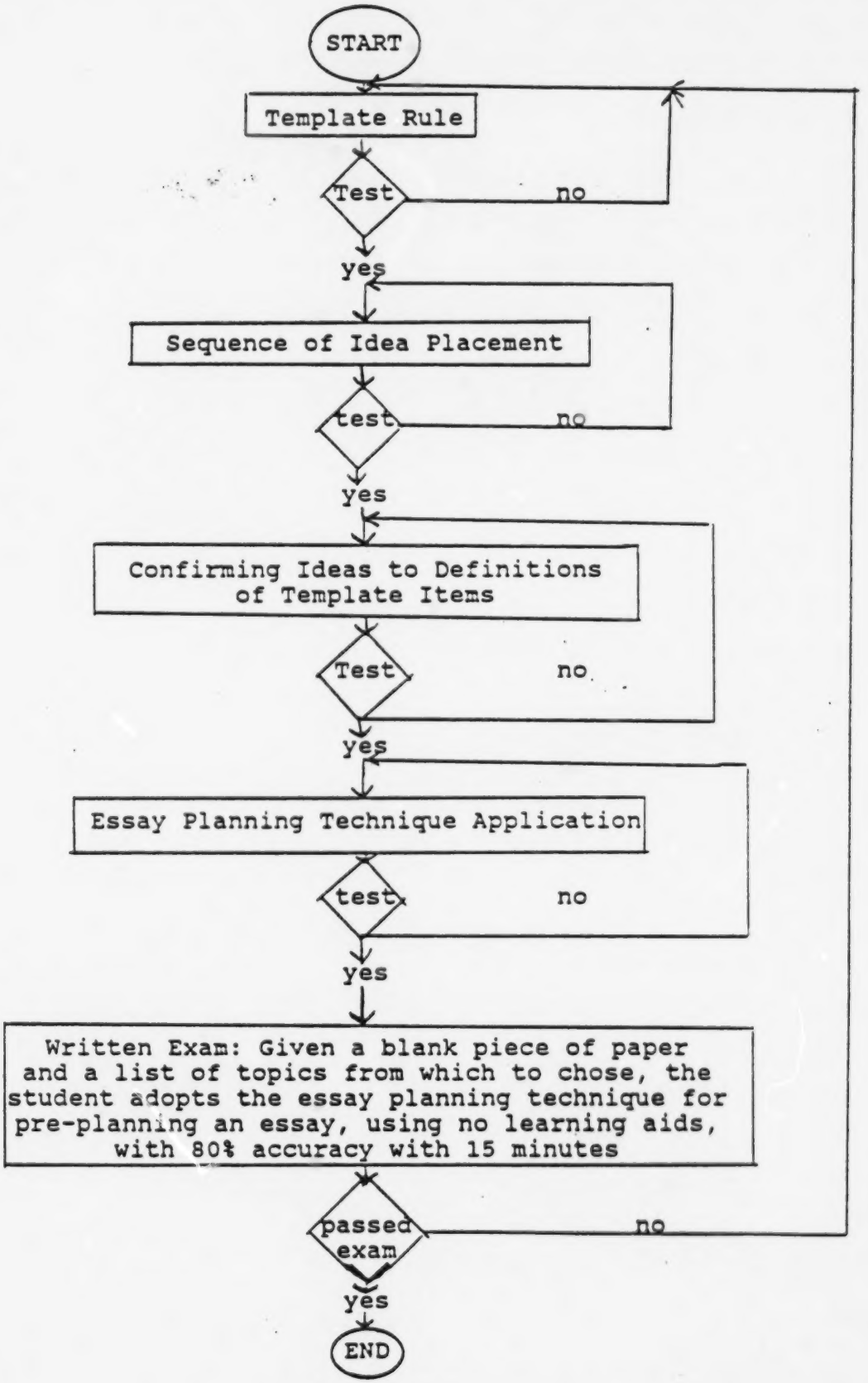
The flowchart is shown in figure 2. Four lessons and the terminal objective are depicted.


OBJECTIVE: Given a blank piece of paper & a list of topics from which to chose from, the student adopts the essay planning technique for pre-planning and essay, using no learning aids, with 80% accuracy, in 15 minute, and with retention for at least 7 days.
Adopt the essay planning technique for pre-planning an essay
Identify in proper sequence location on template where idea will be placed
Generate idea which conforms to definition of template item
Determine whether all ideas are present in template
Demonstrate Template Rule
Entry level skill
Demonstrate proficiency in using a personal computer
Select a topic from a given list
Classify parts of Introduction
Classify parts of Body
Classify parts of conclusion
Classify background
Classify topic sentence
Classify transition
Classify subtopic sentence
Classify details
Classify repeated Topic Sentence
Classify Repeated Transition

LEARNING ANALYSIS

Figure 1

BEST COPY AVAILABLE



FLOWCHART
Figure 2

INSTRUCTIONAL SEQUENCE

III.a. Instructional components: Lesson #4 Cognitive Strategy

1. Gaining Attention

To gain the students' attention and demonstrate the need for learning how to plan, an analogue was drawn between using a blueprint for building a house, and using a plan to structure an essay.

2. Informing the learner of the lesson objective

The computer screen will show the lesson objective to the student.

3.1. Communicating the function and utility of the strategy

The computer program will communicate that essay planning consists of using techniques and strategies to organize student ideas in an essay planning template.

3.2 Communicate the context in which the strategy will be used

The program will communicate a description of the example system as a whole to identify schema having the following component: presentation of an orientation which includes demonstration of the system in full operation.

3.3 Confirm or teach subordinate skills

Three basic concepts must be reviewed by the program prior to event #4. The learner will review the concepts of the three parts of the Introduction, the two parts of the Body of the essay and the two parts of the Conclusion of the essay.

4. Describe and demonstrate the planning task strategy

In this event the program shows the steps that an expert writer goes though when planning an essay. These are taught in order of typical use.

a. topic selection

b. generate template

c. check for completion of elements

d. identification of template location where idea is to be placed

e. written conformation of ideas to template definition

f. repetition of steps "d" and "e" until the essay planning template is completed

g. final check to make sure all ideas are present which need to be presented

5. Provide practice, using a variety of novel problems requiring the strategies taught

At this point the program will provide the learner with two different types of practice experiences. The first practice experience will involve the learner using a pre-printed essay planning template, obtained from the instructor. The program will then guide the learner through the steps in essay planning. The second practice experience will also guide the learner through the steps in essay planning. The learner will now plan an essay without the job-aid.

6. Eliciting performance

Students will be required to pre-plan an essay without any prompting from the computer program. The program will give direction at this time.

7. Provide informative feedback

The program will direct the students to take their essay plans to the instructor for feedback. Note: please see appendix 2 for instructor feedback form.

8. Assessing performance

To assess the student's understanding of the learning strategies which were taught and practiced in this lesson, the program will direct the students to: 1) take out a blank sheet of paper, 2) choose a topic from those listed on the computer

screen, 3) complete an essay plan within 15 minutes, 4) give it to the instructor for grading. Mastery will be established when the students can properly produce an essay plan at 80% accuracy within 15 minutes.

9. Enhancing retention and transfer

In order to meet Gagne's requirement for use of review questions at spaced intervals, the instructor will do several things. Once a week, at the beginning of class, the instructor will briefly review the concept of the template rule and the steps necessary to produce an essays plan. The students will then be given three topics from which to choose and 15 minutes to write an essay plan. At the end of the 15 minutes students will correct each other's papers using the same feedback form that the instructor used to grade the papers during the original lesson. The entire process should take about twenty minutes.

Please see appendix 3 for complete (rough draft) screen designs.

DESIGNER'S NOTES

1. We realize that in event #1 we state the function and utility of the strategy and again in event 3.1. We felt that this would be of particular help to the learner to have the function and utility tied in at this point in the lesson.

2. We assume that as part of the Demonstrate Template Rule, students will be able to determine whether all template items are present, and generate a template in which all items are correctly sequenced. Therefore, although it is an important step in planning an essay, it does not appear in our Learning Analysis.

3. Given the level of intelligence of these students, we assumed they do not need to be taught to determine whether all ideas are present in the template. Hence, although it is an important step in pre-planning an essay, it does not appear in our Learning Analysis.

4. The program at present cannot be exited from within the structure of the lesson. This is a recognized limitation of the program which would take restructuring of the program code. Given the time constraints, this feature will be added in future revisions.

5. Interactivity is a major component of good educational software. But, since this program involves language skills interactivity had to be limited since creating a natural language processor would greatly increase development time. In addition, typing was kept to a minimum since it would have created another difficult task for the students to do.

6. Because of the limitations of computer memory and the large size of graphic images some graphics had to be stored on and accessed from the diskette rather than from random access memory. This process increases the display time for some graphics.

7. The wording of the instructional events given in appendix 3 is not exactly as what appears on the computer screens. This is due to the fact that the computer-aided program is designed more for a user friendly interface instead of communication between the instructional designer and the

programmer.

REFERENCES

Corno, L. & Mandinach, E.B. (1983). The role of cognitive engagement in classroom learning and motivation. Educational Psychologist 18 (2), 88-108.

Derry, S.J. & Murphy, D.A. (1986). Designing systems that train learning ability: from theory to practice. Review of Educational Research, 56(1) 1-39.

Fitts, P.M. & Seeger, C.M. (1953). The information capacity of the human motor system in controlling the amplitude of movement. Journal of Experimental Psychology, 46, 199-210.

Gagne, R.M., Briggs, L.J., & Wager, W.W. (1988). Principles of Instructional Design. (3rd ed.). New York: Holt, Rinehart & Winston, Inc.

Gagne, R.M., Merrill, M.D. O'Neil, H.F. (1989). Instructional Strategy for Teaching Learning Strategies.

Leech, G. & Candlin, C. (Eds.) (1986). Computers in english language teaching and research. London: Longman Group Ltd.

O'Neil, H.F., Slawson, D.A., & Baker, E.L. (1989). Design of a domain-independent problem solving instructional strategy for intelligent computer-assisted instruction.

U.S. Congress, Office of Technology Assessment. (1988). Power-On! New tools for teaching du learning, OTA-SET-379, Washington, D.C.: U.S. Government Printing Office.

Vleck, C. & Wimian, R. (1989). Managing media services: Theory and practice, Englewood:Library Unlimited Inc.

APPENDIX 1

STUDENT QUESTIONNAIRE

I. Instructional Adequacy

Never Rarely Usually Always
1 2 3 4

1. Was it clear to you what your options were as you moved thru the lesson? (e.g. Help, Quit). That is, was it always clear to you what you were to do?

2. Was the lesson consistent with the objectives of the lesson?

3. Did the lesson move smoothly from one segment to the next? That is, were the various parts of the lesson well-sequenced?

4. Was the language used in the lesson clear?

5. Did you know most of the vocabulary contained in this lesson?

6. Were there enough essay topics to select from?

7. Were there sufficient opportunities to view additional models of essay plan?

8. Were there sufficient opportunities to practice writing an essay plan?

9. Was it clear to you what was important in the lesson?

10. Was the amount of information taught at each stage of the lesson appropriate?

11. Did you feel you were able to control the pace of the lesson to suit you?

12. Was this lesson interesting and motivating?

13. What is your general impression of the computer's personality or user friendliness?

14. Did you feel that you could exit the program at any time?

15. Did you find all of the information contained on the screen was necessary (or was there some information which was unnecessary)?

II. Cosmetic Adequacy

1. Is the amount of information on the screen adequate (or was the screen too cluttered)?

2. Did the use of color and sound help your learning?

3. Did the use of graphics (e.g. the person building the house) help your comprehension of the lesson being taught?

4. Did you find the lesson visually appealing?

5. Do you believe that the sounds added to the lesson's effectiveness?

III. Program Adequacy

1. Was it easy for you to start up the program?

2. Did you feel that your work was adequately evaluated by the instructor?

3. Did the computer respond quickly enough (or were there delays)?

Any comments/suggestions??

SUPERVISOR/INSTRUCTOR QUESTIONNAIRE

I. Instructional Adequacy

	Never	Rarely	Usually	Always
	1	2	3	4

1.Do you think it will be clear to students what their options are as they move through the lesson? (e.g. Help, Quit)

2. Was it always clear what students were to do next?

3. Did the lesson move smoothly from one segment to the next? That is, were the various parts of the lesson well-sequenced?

4. Were the various components of the lesson logically related to the lesson objective?

5. Was the language used in the lesson clear?

6. Do you think students will know most of the vocabulary contained in this lesson?

7. Were there sufficient opportunities to view additional models of essay plans?

8. Were there sufficient opportunities to the students to practice writing essay plans?

9.Were there enough essay topics to select from?

10. Do you believe the topics contained will be of interest to the student?

11. Do you believe it will be clear to the students what the most important parts of the lesson are?

12. Was the amount of information taught at each stage of the lesson appropriate?

13. Do you feel students will be able to control the pace of the lesson to suit them?

14. Do you believe that the students will find the lesson interesting and motivating?

15. Do you believe the students will be able to exit the program at any time?

16. Did you find all of the information contained on the screen was necessary (or was there some information which was unnecessary)?

17. Did you believe that students will feel that they can control the number of model essay plans you wanted to see?

II. Cosmetic Adequacy?

1. Was the amount of information on the screen adequate (or was the screen too cluttered)?

2. Do you believe that the use of color and sound enhance will help student learning?

3. Do you believe that the use of graphics (e.g. the person building the house) help student comprehension of the lesson being taught?

4. Will the students find the lesson visually appealing?

III. Program adequacy

1. Do you believe that students will find it easy to start up the program?

2. Do you believe that students will feel that their work has been adequately evaluated by the instructor?

3. Did the computer respond quickly enough (or were there delays)

IV. Curriculum Adequacy

1. Do you believe that teachers could easily employ the package?

2. Do you believe that this lesson could fit into the existing curriculum?

3. Is there enough flexibility so that this lesson could be used in other writing courses even though the thematic content may differ?

4. Do you believe that the content (i.e., components of a well-written essay: Introduction, Body Conclusion) will become obsolete over time?

Comments/Suggestions

APPENDIX 2

INSTRUCTOR FEEDBACK FORM

TEMPLATE

Student Recommendations

Are all template items present?

1) Introduction	yes	no
2) Background	yes	no
3) Topic sentence	yes	no
4) Transition	yes	no
5) Body	yes	no
6) at least 1 subtopic	yes	no
7) Details for each subtopic listed above	yes	no
8) Conclusion	yes	no
9) Repetition of topic sentence	yes	no
10) Repetition of transition	yes	no

Student needs to supply the following information:

Consult Lesson #1 for additional assistance.

Are all the template items in the proper sequence?

Introduction

11) Background	yes	no
12) Topic Sentence	yes	no
13) Transition	yes	no

Body

14) Subtopic yes no

15) Details yes no

Conclusion

16) repetition of topic sentence yes no

17) repetition of transition yes no

Student needs to revise the following template items which are out of sequence:

Consult Lesson #1 for additional assistance.

STUDENT IDEAS

18) Is the template completely filled in with student ideas? yes no

Those template items which do not contain ideas are as follows:

Supply ideas for each of these template items. Make sure they conform to the template definitions.

Do student ideas conform to template item definitions?

19) Background	yes	no
20) Topic Sentence	yes	no
21) Transition	yes	no
22) Subtopics	yes	no
23) Details for each subtopic	yes	no
24) Repetition of topic sentence in Conclusion	yes	no
25) Repetition of transition in Conclusion	yes	no

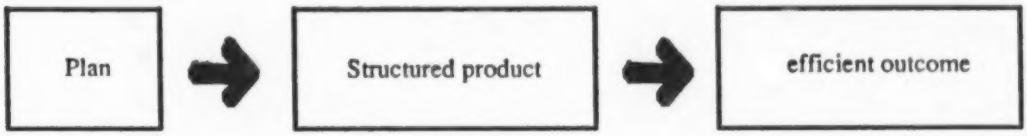
Student ideas not conforming to template item definitions are as follows:

Review Lesson #3, then modify ideas to conform to template definitions.

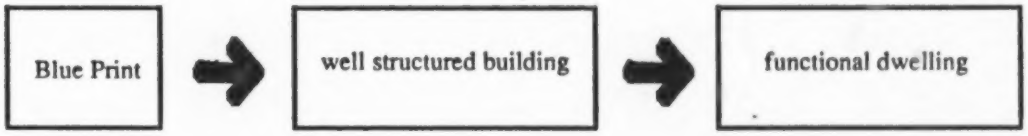
APPENDIX 3

EVENT 1: Getting Attention

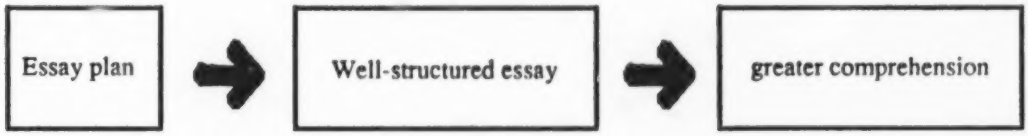
As you can see, planning has advantages because it allows you to have a well structured product (e.g. the house was well built, a well organized desk). This, in turn, will result in an efficient outcome!



In the house building example, the 2nd person succeeded because s/he followed this principle



The same is true when constructing essays

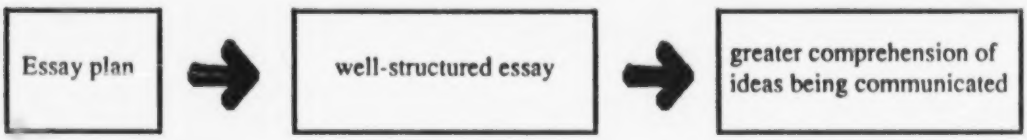


EVENT 2: State Objective

Given a blank piece of paper and a list of topics from which to choose, the student adopts the essay planning technique for pre-planning an essay, using no learning aids, with 80% accuracy, in 15 minutes and with retention for at least 7 days.

EVENT 3.1: C ommunicating Function and Utility of the Strategy

Remember this chart from the beginning of the lesson



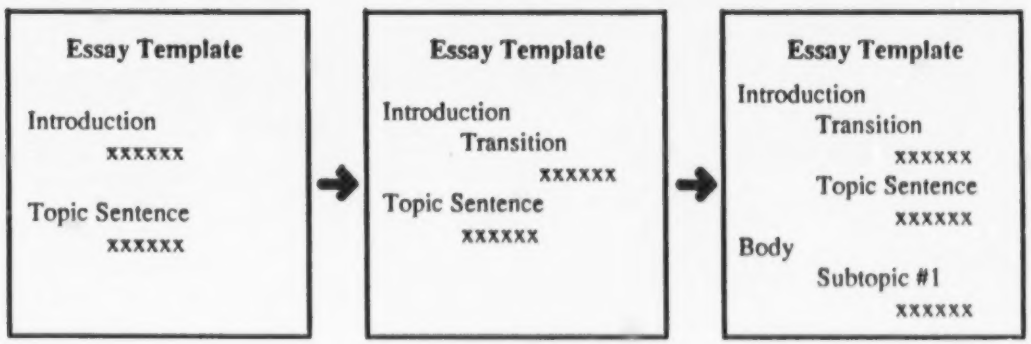
In order to produce this essay plan, we will teach you:

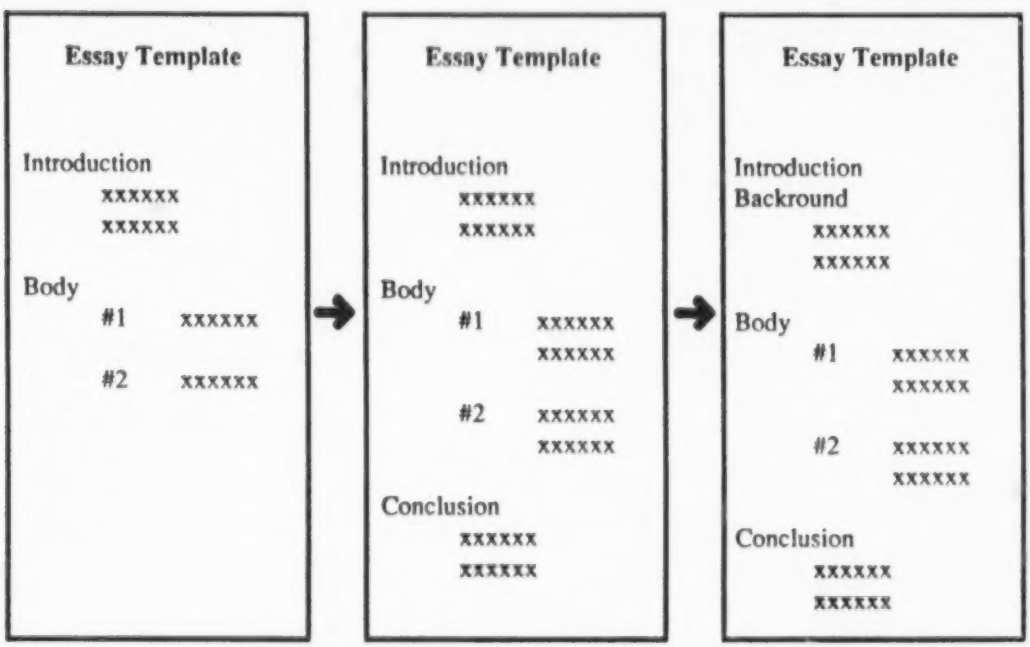
1) What an essay template is.

2) How to integrate your ideas into the template so that the result is a well-organized essay plan.

EVENT 3.2: Communicate Context in which Strategy will be used

When confronted with the organization of an essay, the technique which we will teach in this lesson will help you to produce an essay plan this way.





Event 3.3: Confirm or Teach Subordinate Skills

Remember that the essay consists of 3 parts

INTRODUCTION

BODY

CONCLUSION

The Introduction consists of 3 parts:

BACKROUND

TOPIC SENTENCE

TRANSITION

The Body consists of a series of subtopics and Details for each.

BODY

SUBTOPIC #1
DETAILS
SUBTOPIC #2
DETAILS

The Conclusion or Summary consists of 2 parts.

REPEAT OF TOPIC SENTENCE

REPEAT OF TRANSITION

EVENT 4: Describe the Task Strategies

Here is the way an expert writer goes about planning an essay.

Step 1: The writer selects topic.

TOPIC LIST

XXXXXX
XXXXXX*
XXXXXX
XXXXXX

Step 2: An essay template is generated.

ESSAY TEMPLATE

Introduction

Body

Conclusion

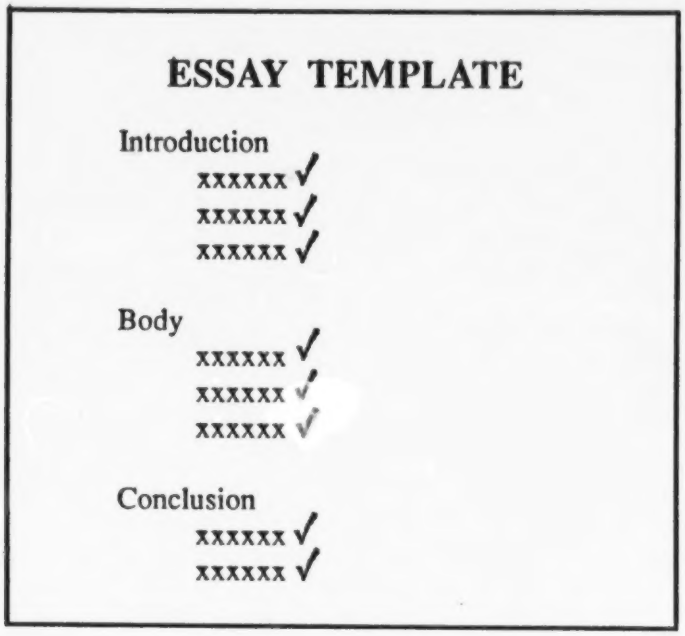
ESSAY TEMPLATE

Introduction
xxxxxx
xxxxxx

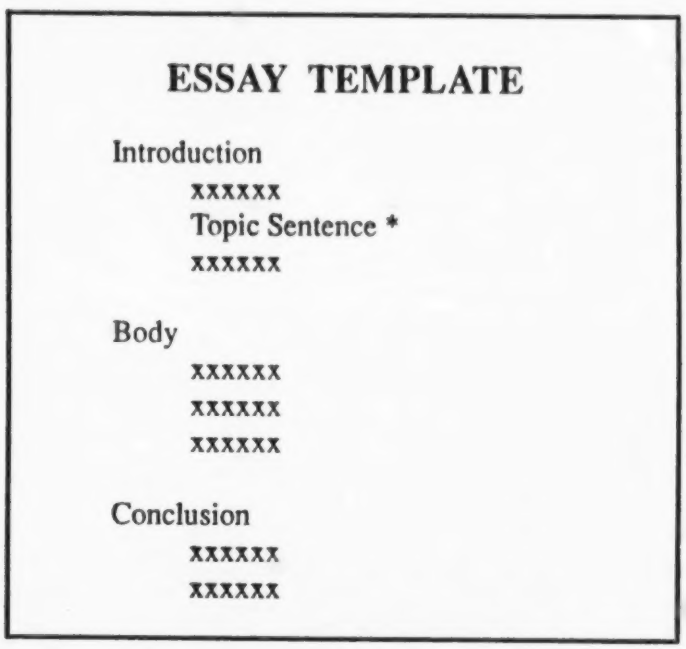
Body
xxxxxx
xxxxxx

Conclusion
xxxxxx

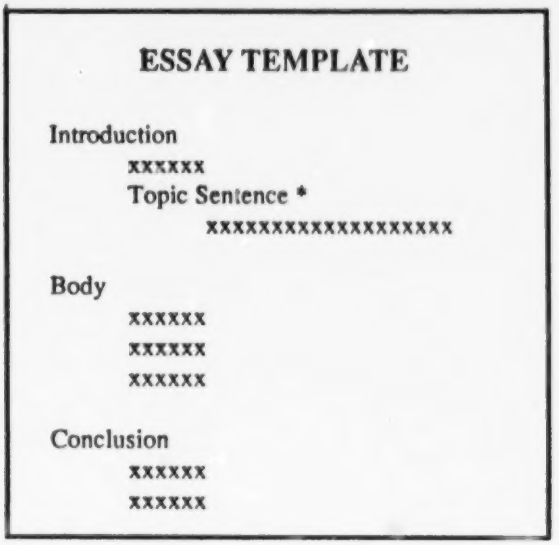
Step 3: The writer dete. mines whether all templates are present.



Step 4: Teh writer identifies, in the proper sequence, the location on the template where the idea will be placed.

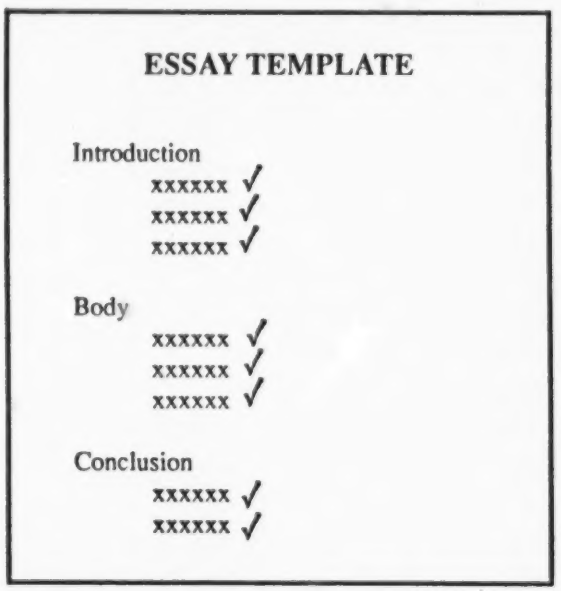


Step 5: The writer generates an idea which conforms to the definition of the template item.



Step 6: The writer repeats steps 4 and 5 until the template is completed.

Step 7: The writer now determines whether all ideas are present on the template.



Would you like to see more examples of how to plan an essay?

EVENT 5: Providing Practice using a Variety of Novel Situations Requiring the Strategies Taught

Now you are going to plan an essay. Get a template from your instructor and choose a topic from the list.

Now that you have planned an essay using a template provided by your instructor, it is time to try it without any aid. Get a blank piece of paper, choose a topic from the topic list and begin.

TOPIC LIST

XXXXXXXX

XXXXXXXX

XXXXXXXX

XXXXXXXX

XXXXXXXX

XXXXXXXX

EVENT 6: Eliciting Performance

Now you are going to plan an essay without any help from the computer.

When you are ready, complete an essay plan and then take it to your instructor for feedback.

TOPIC LIST

XXXXXXXX

XXXXXXXX

XXXXXXXX

XXXXXXXX

XXXXXXXX

XXXXXXXX